# Comparison of Scoring Input Methods for IGA-based Image Retouching System

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**Abstract:**

Image retouching is a task to improve the quality of photos by applying a sequence of multiple filters. Due to the large number of available image filters, the number of possible sequences is huge. Although people try to use a sequence of filters pre-defined by experts for better images, it often fails to reflect user's subjective preference on the retouching task. Interactive genetic algorithm (IGA) is a kind of evolutionary computation guided by human's subjective evaluation. It has been applied to image search, fashion design, evolutionary art, and so on. In this paper, we introduce a new application of the IGA to find a sequence of several filters for retouching photos. The system is composed of evolutionary algorithm, user's evaluation interface and image filter libraries. Because IGA is dependent on user's successive input on the quality of solutions, it is important to design an effective way to get the evaluation score. In this paper, we compared three different scoring methods for the IGA-based retouching system. They are Good & Bad, five-stars and sliding scale. The experimental results on human users show the usefulness of the proposed IGA-based retouching system and give guideline for the choice of good scoring method for the application.

**Keyword:** Interactive genetic algorithm, Scoring method, Image retouching